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ABSTRACT

If professionals are to learn how to maximize the positive effects and minimize the negative effects of day care, they must focus their efforts on the ways caregivers interact with children. This research provides a detailed and intimate look at the conditions under which caregivers interact with low income toddlers. Fifty subjects, ages 24 to 30 months, were observed in seven urban day care centers. Half were boys and 35 were black. APPROACH, an ecological technique for coding child interactions with peers, objects and caregivers, was used to record 80 minutes of each child's behavior equally across five settings over several days. Caregiver interactions with toddlers were subsequently coded for activity setting, toddler circumstance, type of teacher interaction, and the outcome of the interaction. Results indicated that teachers initiate little communication during eating or gross motor play, and that very few teacher bids were ego boosting, although children responded positively to this behavior. Negative controlling bids had much lower rates of compliance. While most interaction involved teaching or questioning, very few questions were open-ended. Also, teacher bids to boys were more likely to follow misbehavior and were more likely to be negatively controlling than bids to girls. The implications of the results are discussed in terms of increasing teacher sensitivity and skills in interaction situations so that day care can become a truly positive intervention experience. (CB)

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# Teacher-Toddler Day Care Interactions: Where, What, and How [a]

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Bronfenbrenner (1977) has characterized much of the research of developmental psychology as "the science of the strange behavior of children in strange situations with strange adults" (p. 513). Instead, he proposes an ecological child research model that would focus attention on the integrated systems in which children function and on the interaction processes occurring in their enduring contexts, such as home or day care. Research knowledge of such processes can increase our understanding of the social meaning of typical child settings and experiences and their potential impact for either enriching or impoverishing children's lives.

> So long as research efforts focus solely upon identifying the effects of day care, without concern for processes of influence, the information necessary for the redesign of programs-for purposes of enhancing their positive effects - will not be available to professionals working in the field of child care. (Belsky, 1980, p. 87)

The risk of school failure for low-income children increases the need for professionals to know more about the extent to which

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the day care experiences for these children support learning and chances for later school success. Day care provides prime opportunity in the form of emotionally positive, intellectually stimulating experiences to very young low-income children, thus allowing society to make an impact on the learning careers of children at risk.

If professionals are to learn how to maximize the positive effects and minimize the negative effects of day care, then they must focus their efforts on the actual process of how caregivers interact with children. This research provides a detailed and intimate look at the conditions under which adults interact with low-income toddlers, whose day care fees are paid by Title XX funds.

## Method

### Subjects

Toddlers 24-30 months old were observed in seven urban day care centers serving low-income families. Day care fees for their families were paid for by Title XX (federal government) funds. The subjects were 25 boys and 25 girls whose mean age was 27 months. There were 11 Caucasian and 14 Black girls, and 8 Caucasian and 17 black boys.

## Procedure

APPROACH (Caldwell & Honig, 1971), a fine grained ecological technique for observing and coding child interactions with peers, objects, and caregivers was used to record 80 minutes of toddler behavior equally across five typical settings (creative, story/song, gross motor, fine motor, and eating) over a mean of nine days per child. Of the 80 minutes of morning day care observations carried out for each child, no more than eight minutes were recorded in any of the five given activity settings per day and no more than 20 minutes total per child per day in order to increase the validity of the "typicalness" of settings sampled and behaviors recorded.

## Data Analysis

The method used to analyze the data was a modification of Bronson's (1974) coding sytem. This system permits reliable categorization of toddlers' and caregivers' bids in dyadic interaction. Every caregiver interaction with a toddler was subsequently coded by two independent coders (reliability 95.5%) into one and only one of the categories specified below for each of four variables:

1. Activity setting in which the teacher behavior to toddler occurred: story/song, fine motor activity, eating, creative activity, and gross motor activity.

2. Toddler circumstance immediately prior to teacher bid: active involvement with objects or persons; exhibiting need/distress; non-engagement; or negative involvement.

3. Type of teacher interaction: positive techniques (ego-boosting; teaching; questioning); commanding; negatively controlling; combining (a positive technique with commanding or negatively controlling).

4. Outcome of the teacher interaction: Child compliance or noncompliance.

## Results

Table I shows the distribution of teacher bids as a function of the classroom activity setting and child circumstance occurring just prior to a caregiver's bid. Also shown are the frequencies of different types of teacher bids proffered to the children and the outcome of teacher interaction in the form of compliant or non-compliant child responses.

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Insert Table I About Here

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Settings

Of the total number (4027) of teacher interactions directed to 50 toddlers, 1/4 occurred in story/song, 1/4 during creative activity time, and 1/5 during fine-motor activities (See Table I). The settings in which teachers provided fewest interactions with toddlers were gross motor (15.8%) and eating (16.5%).

Sex differences. While there was a trend for male toddlers to receive more ($p<.06$, one-tailed t-test) bids from teachers than female toddlers (2180 versus 1847) no differences were found for the frequency of teacher interactions as a function of sex of toddler in four of the five settings observed. However, boys did receive significantly more teacher bids during fine motor activity than did girls (15.1% vs. 23.1%, $p<.002$, two-tailed t-test).

Circumstance

The most typical behavior a toddler was likely to be engaged in just prior to an adult bid was active involvement with materials or persons. Table 1 shows that 52.3% of teacher interactions occurred under such circumstances. Slightly under 1/5 of teacher interactions occurred when toddlers expressed need/distress. Of all the teacher interactions with toddlers about 7% occurred when toddlers were not engaged in any activity, and about 22% occurred when toddlers were negatively involved with persons or materials.

Sex differences. Table 2 shows that significantly more ($p<.01$, two-tailed t-test) teacher behaviors were directed to

male toddlers (422) in need/distress than to females (307). Significantly more teacher bids followed male "misbehavior" or "negative involvement" (626) than female behavior (273 bids) of this type ($p<.0001$, two-tailed t-test).

Teacher Techniques

The predominant kind of interaction teachers used with toddlers was a teaching bid - 46% of their interactions. In Table 1 note that questioning techniques accounted for 1/5 of bids. Commands, negative controls and combination bids together represented 1/4 of teachers' repertoire. Ego boosting represented 8% of the adults bids to toddlers.

Sex differences. Table 3 shows that teaching, ego boosting and questioning techniques were offered by caregivers equally often to boys and girls.

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Insert Table 3 about here

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Commands were also given equally to the toddlers. However, significantly more negatively controlling bids ($p<.007$, two-tailed t-test) were made to males (221) versus females (117). Also significantly more ($p<.003$, two-tailed t-test) combination bids (of negative together with positive communications) were made to boys (198) versus girls (91).

Compliance

Table 1 reveals that toddlers were rated as compliant with 78.5% of teacher behaviors. Different types of caregiver bids resulted in different child rates of compliance, as shown in Table 4.

Insert Table 4 about here

Children responded positively to 98.2% of caregiver ego boosts (praising alone or in conjunction with: informing; redirecting to a learning activity; and/or facilitating a child). Compliance was high (86.7%) to teaching bids. Toddlers responded to between 53 and 66% (average 61.2%) of teacher commands, negative and combination bids. Toddlers tried to answer 55.2% of teacher questions.

Sex differences. No significant difference in rates of compliance by boys or girls was found (See Table 5).

Insert Table 5 about here

Although the rates did not differ, the number of noncompliant responses by male toddlers (581) was significantly greater than the number of noncompliant female responses (444), ($p<.035$, two-tailed t-test).

## Discussion

A microanalytic study of the settings, circumstances, and types of techniques reflected in caregiver bids to toddlers helps clarify the types of outcomes of such interactions. Of interest are both short term outcomes (whether toddlers are compliant with and responsive to teacher initiations) and long term outcomes (whether teacher techniques have a positive, neutral, or inimical influence on the cognitive and emotional learnings of toddlers).

Results of this analysis show that teachers initiate communications to toddlers most often in story/song, creative, and fine motor activities. When toddlers were engaged in gross motor play and eating, two salient body activities important for emotional homeostasis, caregivers made the least number of communicative bids. Eating and free play time (when children run around and use their bodies more freely than at other times) are two important occasions for adult language labelling of actions and objects and adult encouragement of awareness and pleasure in body functioning. Adults can enhance such child pleasures by increasing their positive communications during meals, in the classroom during free play, and on the playground.

The child circumstances which seemed to occasion the greatest proportion of adult bids were when children were either positively or negatively involved in play with materials or with other persons. Three-fourths of teacher bids were observed under these

circumstances and one-fourth when children were either distressed or non-involved. The question then becomes whether adults are meeting the needs of toddlers who are nonengaged (wandering) or who are expressing need/distress. Analysis of toddler-initiated bids to these teachers (Honig & Wittmer, in press) reveals that 30% of toddler distress/ negative bids and 25% of toddler positive bids were not responded to by adults. If day care is to become truly an instrument for effective intervention, then adults need to initiate and respond more frequently and appropriately to toddler emotional behaviors.

The types of techniques that adults used with children varied. Teaching and questioning represented 2/3 of adult responses - a gratifying confirmation of the teaching role that adults in day care see themselves as carrying out with toddlers. Yet, 80% of teacher questions to these toddlers were convergent and fewer than 1/5 were Socratic (Honig & Wittmer, 1982). Sigel & Saunders (1979) posit, in the distancing hypothesis, that open-ended questions engage the young child in the most intellectually advantageous "thinking about" experiences for developing new understandings.

Only 8% of adult bids were ego boosts. Eriksonian theory would predict that increased positive emotional interchanges can give a boost to toddler self-confidence and to building basic trust between toddler and teacher. For day care to become a therapeutic intervention (which it well may need to become, for

example, for toddlers court-ordered into care in child abuse/neglect cases) training should focus on enhancing adult ability to provide a greater proportion of ego-boosts, encouragement and emotionally pleasureful communications with toddlers.

Analysis of differences in teacher bids to toddlers as a function of sex of child showed that for male toddlers day care may provide an ambiance with more mixed emotional messages. There was a tendency ($p<.06$, one-tailed t-test) for adults to initiate more bids to males than to females. Teaching, ego boosts and questioning techniques were initiated equally often to boys and girls. But more adult communications were addressed to male toddlers engaged in negative behaviors or expression of need/distress than to females. In fact, 1048/2180, or about half of adult bids to male toddlers, occurred under these conditions. Only 580/1847, or fewer than 1/3 of adult bids to female toddlers, occurred under such circumstances. There was no significant difference in numbers of teacher bids to female and male toddlers under circumstances of active involvement or nonengagement occurring prior to a caregiver bid. But, males were getting more adult inputs when they were in some difficulty or in distress, either personally or in interaction with others.

Also, significantly more adult communicative techniques with male toddlers (compared to females) were negatively controlling or were a combination of positive techniques with a command or a negative technique. Cognitive transactions were equally availa-

ble to male and female toddlers. But it seems, if one considers emotional mental health, that metropolitan day care may not be as positive for males as for females. Sex role research shows that male toddlers receive more harsh or restrictive treatment at home (Honig, 1983). Can we find ways to increase adult sensitivity in day care so more effort is made to communicate more positively with male toddlers?

With respect to this issue, the data on toddler compliance are illuminating. Ego boosting by caregivers was almost invariably responded to positively by toddlers. More negatively-toned techniques (commands, negatives, and combined bids) received about 61% compliance from toddlers. These figures agree quite well with those reported in other studies - of toddler compliance to parental strictures (Lytton, 1980; Minton, Kagan & Levine, 1971). What is disturbing is that the male toddlers in these day care centers exhibited a greater number, although not a greater rate, of noncompliant responses to bids. One can speculate that the caregiver patterns of interaction found in this research may increase the probability of negative male toddler responses. Again, training techniques should focus on ways in which male distress needs or negative behaviors can be handled so that compliance and cooperation rates, equally high at this age for both boys and girls, can continue equal and high for toddlers of both sexes.

## Conclusion

An intimate look at the microanalytic chains of responses occurring during interactions of adults with toddlers in a variety of circumstances and in different settings in day care can help pinpoint areas where caregivers may need to increase their sensitivities and skills in particular interaction situations. Adults can learn to redirect toddlers more effectively to more appropriate behaviors and can provide more positive emotional supports for development. Then day care can become truly a positive intervention experience for toddlers.

Table 1

Settings, Circumstances, Teacher Bids, and Toddler Responses in Title XX Day Care

| Variables | Number of Bids | Percentage of Bids per Variable |
|---|---|---|
| **Settings** | | |
| Story/Song | 1003 | 24.9% |
| Creative | 942 | 23.4% |
| Eating | 663 | 16.5% |
| Fine Motor | 782 | 19.4% |
| Gross Motor | 637 | 15.8% |
| **Child Circumstance** | | |
| Actively Involved | 2106 | 52.3% |
| Need/Distress | 729 | 18.1% |
| Nonengaged | 293 | 7.3% |
| Negatively Involved | 899 | 22.3% |
| **Type of Caregiver Bid** | | |
| Ego Boosting | 326 | 8.1% |
| Teaching | 1853 | 46.0% |
| Questioning | 833 | 20.7% |
| Combination | 289 | 7.2% |
| Commanding | 388 | 9.6% |
| Negatively Controlling | 338 | 8.4% |
| **Child Response to Teacher Bid** | | |
| Compliance | 3002 | 74.5% |
| Noncompliance | 1025 | 25.5% |

Table 2

Frequency of Adult Bids as a Function of Circumstance and Sex of Child

| CHILD CIRCUMSTANCE | SEX MALE | FEMALE |
|---|---|---|
| Active Involvement | | |
| Number | 979 | 1127 |
| Mean | 39.16 | 45.08 |
| SD | 18.77 | 21.60 |
| Need/Distress | | |
| Number | 422 | 307 |
| Mean | 16.88** | 12.28 |
| SD | 6.91 | 5.71 |
| Nonengagement | | |
| Number | 153 | 140 |
| Mean | 6.12 | 5.60 |
| SD | 3.80 | 3.91 |
| Negative | | |
| Number | 626 | 273 |
| Mean | 25.04*** | 10.92 |
| SD | 13.43 | 9.46 |
| Total Number | 2180 | 1847 |
| Mean | 87.20* | 73.88 |
| SD | 32.05 | 26.34 |

*p<.115 (p<.06 one-tailed t-test)
**p<.01 (two-tailed t-test)
***p<.0001 (two-tailed t-test)

Table 3

Frequency of Adult Bids as a Function of Technique and Sex of Child

| CAREGIVER BIDS | SEX MALE | FEMALE |
|---|---|---|
| **Teaching** | | |
| Number | 979 | 874 |
| Mean | 39.16 | 34.96 |
| SD | 17.38 | 14.97 |
| **Ego Boosting** | | |
| Number | 184 | 142 |
| Mean | 7.36 | 5.68 |
| SD | 3.84 | 5.60 |
| **Questioning** | | |
| Number | 403 | 430 |
| Mean | 16.12 | 17.20 |
| SD | 6.63 | 7.69 |
| **Commanding** | | |
| Number | 195 | 193 |
| Mean | 7.80 | 7.72 |
| SD | 4.56 | 5.36 |
| **Negatively Controlling** | | |
| Number | 221 | 117 |
| Mean | 8.84* | 4.68 |
| SD | 5.55 | 4.77 |
| **Combining Positive (Teaching, Ego Boosting, & Questioning) with Negative (Commanding & Negatively Controlling)** | | |
| Number | 198 | 91 |
| Mean | 7.92** | 3.64 |
| SD | 6.38 | 2.23 |

*p<.007 (two-tailed t-test)
**p<.003 (two-tailed t-test)

Table 4

Compliance to Caregiver Bids for Two-Year-Olds

| Type of Bid | Compliance |
|---|---|
| Ego Boost | 98.2% |
| Teaching | 36.7% |
| Questioning | 55.2% |
| Combination | 66.1% |
| Command | 53.9% |
| Negative | 63.6% |

Table 5

Compliance and Noncompliance as a Function of Sex of Toddler

| | Male | Female |
|---|---|---|
| **Compliance** | | |
| Rate | 73.35% | 75.96% |
| Number | 1599 | 1403 |
| Mean | 63.96 | 56.12 |
| SD | 23.73 | 20.86 |
| **Noncompliance** | | |
| Rate | 26.65% | 24.04% |
| Number | 581 | 444 |
| Mean | 23.34* | 17.76 |
| SD | 11.47 | 9.63 |

*p<.035 (two tailed t-test)

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